

Central Universities Entrance Examination (CUCET - 2011)

M.Arch. Sustainable Architecture (MARCH)
(Offered by CU Rajasthan)

The Question paper will have common Part A and subject specific Part B

Part A: It will be of 45 minutes duration and will have 35 Multiple Choice Questions (MCQs), with four options: only one correct. Part A is intended to test the applicants; general awareness, reasoning, basic language skills (English) and analytical skills.

Part B: will be subject specific, of 75 minutes duration and will consist of 65 Multiple Choices Questions (MCQs) with four Options: only one correct, covering various subjects that a Bachelor of Architecture is expected to know including but not limited to the following:

Syllabus/ Topics for Subject Specific Part B:

- a) Mathematics (basic understanding / aptitude as applicable for sustainable architecture)
- b) General awareness about Ecology, Environment, Climate Change, Renewable energy
- c) Vernacular, Traditional and Recycled Materials in context of Sustainable Architecture
- d) Contemporary and famous examples of sustainable / energy efficient architecture / settlement planning across the world
- e) Climatology and Climate Responsive Architecture – Vernacular, Traditional and Modern
- f) Building Services and Utilities – Electrical, HVAC, Sanitary and Plumbing, Solid and Liquid Waste Management, (with special reference to energy efficiency, recycling and re-use)
- g) Water Conservation, harvesting and recharge – Traditional and Modern Methods
- h) Overview of Green Buildings rating systems (TERI-GRIHA and LEEDS)

Sample Questions (PART B)

<p>1. AB is a diameter of circle and C is any point on the circumference of the circle, Then:</p> <ol style="list-style-type: none">a. The area of triangle ABC is maximum when it is isosceles.b. The area of triangle ABC is minimum when it is isoscelesc. The perimeter of triangle ABC is maximum when it is isosceles.d. None of these <p>2. Thermos-flask with circular cross-sections are better because they avoid less loss or gain of heat by:</p> <ol style="list-style-type: none">a. Convectionb. Conduction	<p>11. Green Building design involves:</p> <ol style="list-style-type: none">a. Holistic approachb. Understanding building performancec. Caring for environment and health of occupantsd. All the above <p>12. The three dimensions of sustainability are:</p> <ol style="list-style-type: none">a. Environmental, Economic and Socialb. Energy, Empowerment and Culturec. Equity, Environment and Safetyd. None of above <p>13. 'Water harvesting' has emerged as a sensible method of meeting the water</p>
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- c. Evaporation
 - d. Radiation
3. LPG (liquefied petroleum gas) is a:
- a. Mixture
 - b. Compound
 - c. Element
 - d. None of these
4. Which is most abundant in earth's crust:
- a. Calcium
 - b. Silicone
 - c. Carbon
 - d. Oxygen
5. A sudden decrease in the barometer shows:
- a. Arrival of storm
 - b. Arrival of rain
 - c. Fine weather
 - d. Dry weather
6. TERI is acronym for
- a. The Energy Research Institute
 - b. Tata Environmental Research Institute
 - c. The Economic Research Institute
 - d. None of above
7. Mixed cropping is useful when:
- a. Crops with varying maturity periods are sown together
 - b. Crops with same maturity periods are sown together
 - c. Different soils are used for same crop
 - d. Crops with different nutritional requirements are grown
8. Urea on hydrolysis gives:
- a. Only ammonia
 - b. Only carbon dioxide
 - c. Ammonia and carbon dioxide
 - d. None of these
9. Man dies in the atmosphere of carbon monoxide because:
- a. It combines with oxygen present in the body to form carbon dioxide
 - b. It reduces the organic matter of tissues
 - c. It combines the haemoglobin of blood making it incapable of absorbing oxygen
 - d. It dries up with blood
10. For designing the foundations, following parameters are required:
- a. Limit bearing capacity of soil
 - b. Density of soil and
 - c. Angle of earth frustum.
 - d. All above

- shortfall in a cost-effective manner and is now being applied in most cities to raise the groundwater levels. Water harvesting is the:
- a. Collection of water from river
 - b. Collection of rainwater in storage tanks or putting back into the soil to recharge groundwater
 - c. Harvesting of water from tube-wells
 - d. Harvesting water from surface sources like ponds instead of using underground water sources.
14. Architect who pioneered vernacular sustainable eco-friendly architecture in India with brick mud and other local materials is:
- a. Laurie Baker
 - b. Charles Correa
 - c. B.V Doshi
 - d. A.P Kanvinde
15. Which housing type might have the smallest carbon footprint:
- a. Multi-family traditional house in walled city of Jaipur
 - b. solar singly family house on a plot of land
 - c. modern farm house in rural setting
 - d. apartment in multi-story building
16. Factors that contributed to excellent performance of houses built with ancient traditional wisdom during the Bhuj (Gujarat) earthquake are:
- a. Circular shape, hence excellent resistance to lateral forces
 - b. Thick adobe walls - high in-plane stiffness
 - c. Light-weight roofing with ductile materials
 - d. Combined effect of a, b, c above
17. Which very famous architect has had to defend some of their negative comments about green architecture
- a. Frank Gehry
 - b. Zaha Hadid
 - c. Eric Owen Moss
 - d. Charles Correa
18. One of the most acclaimed public green projects in the United States - *California Academy of Sciences* with numerous sustainable features is designed by Architect:
- a. Renzo Piano
 - b. N. Foster
 - c. Richard Rogers
 - d. Michael Hopkins
19. Who focused on sustainability long before it entered mainstream design:
- a. Donald Ross
 - b. Dick Wilson
 - c. Buckminster Fuller
 - d. Mies van der Rohe

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